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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,949	12/13/2001	Brian Fahs	10019980-1	7384

7590 11/21/2006

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

KANG, INSUN

ART UNIT	PAPER NUMBER
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2193

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/016,949	Applicant(s) FAHS ET AL.	
	Examiner Insun Kang	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This action is in response to the amendment filed 9/6/2006.
2. Claims 1-24 are pending in the application.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hundt ("HP Caliper – An Architecture for Performance Analysis Tools," 8/2000) in view of Srivastava et al. (US Patent 5,963,740) hereafter "Srivastava."

Per claim 1:

Hundt discloses inlined probes into functions and relocated instrumented functions (section 4.1 Algorithm). Hundt does not explicitly teach identifying an inlined function in sourced code. However, Srivastava teaches it was known in the pertinent art, at the time applicant's invention was made, to "improve execution performance (col. 13 lines 42-53). It would have been obvious for one having ordinary skill in the art to modify Hundt's disclosed system to incorporate the teachings of Srivastava. The modification would be obvious because one having ordinary skill in the art would be motivated to monitor inlined functions for performance optimization as suggested by Srivastava (col. 13 lines 42-53).

Hundt further discloses:

- inserting a breakpoint at the start of said inlined function in said binary executable;  
i.e. "Probes are inlined into functions and instrumented functions are relocated... Every function's entry point is patched with a break instruction," section 4.1 Algorithm)
- replacing said inlined function with a long branch to a shared memory probe code sequence (i.e. "original function's entry point is patched with a long branch instruction to its instrumented version (page 5, 4.1 Algorithm)."

Per claim 2:

The rejection of claim 1 is incorporated, and further, Hundt teaches:

- creating a data structure which maintains location information for said inlined function and information related to said desired task for said inlined function (i.e. "The function is analyzed for instrumentability, probe codes are inlined into the function, IP-relative references are updated, counters are created, and an instrumented version of the function is moved to shared memory. The original function's entry point I patched with a long branch instruction to its instrumented version," section 4.1 Algorithm) as claimed.

Per claim 3:

The rejection of claim 1 is incorporated, and further, Hundt teaches:

- using said performance analysis tool to perform instrumentation on said inlined function (i.e. "The process runs until it hits one of the inserted break instructions at the entry point of a function...and the instrumentation process begins at the current function," section 4.1. Algorithm) as claimed.

Per claim 4:

Art Unit: 2193

The rejection of claim 1 is incorporated, and further, Hundt teaches:

- using said performance analysis tool to perform mapping of samples to said inlined function (i.e. "The Caliper Support Library offers a framework of services and tools for dynamic instrumentation and sampling," page 3 last paragraph; "a strong set of tools and methods used to analyze and monitor run-time behavior of a program. Statistical sampling and binary instrumentation are two of the major techniques," page 1 paragraph 4) as claimed.

Per claim 5:

The rejection of claim 1 is incorporated, and further, Hundt teaches:

- said performance analysis tool is comprised of an instrumentation application (i.e. "The Caliper Support Library offers a framework of services and tools for dynamic instrumentation and sampling," page 3 last paragraph; "a strong set of tools and methods used to analyze and monitor run-time behavior of a program. Statistical sampling and binary instrumentation are two of the major techniques," page 1 paragraph 4) as claimed.

Per claim 6:

The rejection of claim 1 is incorporated, and further, Hundt teaches:

- said performance analysis tool is comprised of a sampling application (i.e. "The Caliper Support Library offers a framework of services and tools for dynamic instrumentation and sampling," page 3 last paragraph; "a strong set of tools and methods used to analyze and monitor run-time behavior of a program. Statistical sampling and binary instrumentation are two of the major techniques," page 1

Art Unit: 2193

paragraph 4) as claimed. Per claims 7-12, they are the computer-readable medium versions of claims 1-6, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-6 above.

Per claims 13-18, they are the apparatus versions of claims 1-6, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 1-6 above.

Per claim 19:

The rejection of claim 1 is incorporated, and further, Hundt teaches: said shared memory probe code sequence saves registers, executes the original bundle of said inlined function, restores said registers, and jumps back to said computer code (i.e. "HP Caliper", 4.1 Algorithm).

Per claim 20:

The rejection of claim 1 is incorporated, and further, Hundt teaches: reading source correlation information from within said binary executable; and obtaining start and end addresses for said inlined function using said source correlation information (i.e. "HP Caliper", 4.1 Algorithm).

Per claims 21-22, they are the computer-readable medium versions of claims 19-20, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 19-20 above.

Per claims 23-24, they are the apparatus versions of claims 19-20, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 19-20 above.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection. Therefore, the finality has been withdrawn. This action is made non-final.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Insun Kang whose telephone number is 571-272-3724. The examiner can normally be reached on M-R 6:30-5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MENG AI AN can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

Application/Control Number: 10/016,949


Page 7

Art Unit: 2193

Customer Service Representative or access to the automated information system, call  
800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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MENG-AL T. AN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100